



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,490	09/30/2003	Berthold Wedding	Q77656	2308

23373 7590 10/18/2006
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER.

PHAN, HANH

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,490

Applicant(s)

WEDDING, BERTHOLD

Examiner

Hanh Phan

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-19 and 21-26 is/are rejected.
- 7) ☒ Claim(s) 7 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. In the Abstract section, the term "Summary" should be change to -- Abstract of the Disclosure --.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 8-11, 15, 18 and 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-Claim 8, line 2, the phrase "in particular by **B/4**" is unclear. What the "**B/4**" is defined.

-Claim 9 recites the limitation "**the sinusoidal signal**" in line 1. There is insufficient antecedent basis for this limitation in the claim.

-Claims 10 and 22 recites the limitation "**the transfer rate**" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 2613

-Claims 11 and 23 recites the limitation "**the combination**" in line 1. There is insufficient antecedent basis for this limitation in the claim.

-Claim 15, lines 1 and 2, the phrase "**The circuitry according to claim 13, wherein a circuitry according to claim 19 is integrated.**" is unclear.

-Claim 18, lines 1 and 2, the phrase "**The circuitry according to claim 13, wherein a circuitry according to claim 19 is integrated.**" is unclear.

-Claim 21, line 2, the phrase " a clock signal **B/4**" is unclear. What the "**B/4**" is defined.

-Claim 24 recites the limitation "**wherein means for phase shifting the clock signal and/or means for frequency dividing the clock signal are integrated**" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 6, 12, 13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyamoto et al (US Patent No. 6,865,348).

Art Unit: 2613

Regarding claims 1 and 13, referring to Figure 2A, Miyamoto discloses a method of generating an optical signal comprising the steps of:

- generating an optical signal by using a laser (i.e., laser diode 42, Fig. 2A);
- using a NRZ-signal (i.e., binary NRZ digital signal source 5, Fig. 2A) with a defined bit rate (i.e., col. 12, lines 39-67, col. 13, lines 1-67 and col. 14, lines 1-38); and
- a sinusoidal signal (i.e., clock source 2, Fig. 2A) with half of the frequency of the bit rate to modulate the optical signal (i.e., col. 12, lines 39-67, col. 13, lines 1-67 and col. 14, lines 1-38).

Regarding claim 2, Miyamoto further teaches wherein in a step the optical signal is modulated by using the NRZ-signal and wherein in another step the optical signal is modulated by using the sinusoidal signal (Fig. 2A, col. 13, lines 1-67 and col. 14, lines 1-38):

Regarding claims 6 and 19, referring to Figures 2A, 9A, 10A, 11A and 17A, Miyamoto teaches a method for precoding a bit stream for an optical transmitter, wherein bits of a differential encoded bit stream are inverted according to a predefined pattern (i.e., col. 12, lines 39-67, col. 13, lines 1-67 and col. 14, lines 1-38).

Regarding claim 12, Miyamoto further teaches the steps of:

- generating an optical signal by using a laser;
- using a NRZ signal with a defined bit rate and a sinusoidal signal signal with half of the frequency of the bit rate to modulate the optical signal (i.e., Fig. 2A, col. 12, lines 39-67, col. 13, lines 1-67 and col. 14, lines 1-38).

Art Unit: 2613

7. Claims 4 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (US Patent No. 5,339,183).

Regarding claims 4 and 16, referring to Figure 7, Suzuki teaches a method of generating an optical MSK signal comprising the steps of:

generating an optical signal by using a laser (i.e., LD 1 and LD2, Fig. 7, col. 4, lines 22-67 and col. 5, lines 1-35);

using a first bipolar RZ-signal (i.e., a first bipolar RZ signal A, Fig. 7) with a defined bit rate (i.e., 2.5G, Fig. 7) and a second RZ-signal (i.e., a second RZ signal B, Fig. 7) with identical bit-rate (i.e., 2.5G, Fig. 7), wherein the second signal is delayed (i.e., the second RZ signal B is delayed by a delay circuit 7, Fig. 7), to modulate the optical signal (i.e., col. 4, lines 22-67 and col. 5, lines 1-35).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al (US Patent No. 6,865,348) in view of Baeyens et al (Pub. No.: US 2004/0223765).

Regarding claims 3, 14 and 25, Miyamoto differs from claims 3, 14 and 25 in that he does not specifically teach the NRZ-signal and the sinusoidal signal are combined

Art Unit: 2613

before modulating the optical signal. Baeyens, from the same field of endeavor, likewise teaches NRZ-to-RZ conversion for communication systems (Figs. 1 and 2). Baeyens further teaches the NRZ-signal and the sinusoidal signal are combined before modulating the optical signal (Fig. 2, page 2, paragraph [0017]-[0018]). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the NRZ-signal and the sinusoidal signal are combined before modulating the optical signal as taught by Baeyens in the system of Miyamoto. One of ordinary skill in the art would have been motivated to do this since allowing combining the individual signals into the combined signal.

10. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US Patent No. 5,339,183).

Regarding claims 5 and 17, Suzuki differs from claims 5 and 17 in that he does not specifically teach the first bipolar RZ-signal and the second RZ-signal are combined before modulating the optical signal. However, As indicated in Figure 1, Suzuki teaches a multiplexer 34 combines each electrical signal of plurality of channels into a multiplexed electrical signal before modulating the optical signal (i.e., col. 2, lines 20-28). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the combining each electrical signal of plurality of channels into a multiplexed electrical signal before modulating the optical signal as taught by Figure 1 of Suzuki in the system of Figure 7 of Suzuki. One of ordinary skill in

Art Unit: 2613

the art would have been motivated to do this since allowing combining the individual signals into the combined signal.

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US Patent No. 5,339,183) in view of Miyamoto et al (US Patent No. 6,865,348).

Regarding claim 26, referring to Figure 7, Suzuki teaches a method of generating an optical MSK signal comprising the steps of:

generating an optical signal by using a laser (i.e., LD 1 and LD2, Fig. 7, col. 4, lines 22-67 and col. 5, lines 1-35);

using a first bipolar RZ-signal (i.e., a first bipolar RZ signal A, Fig. 7) with a defined bit rate (i.e., 2.5G, Fig. 7) and a second RZ-signal (i.e., a second RZ signal B, Fig. 7) with identical bit-rate (i.e., 2.5G, Fig. 7), wherein the second signal is delayed (i.e., the second RZ signal B is delayed by a delay circuit 7, Fig. 7), to modulate the optical signal (i.e., col. 4, lines 22-67 and col. 5, lines 1-35).

Suzuki differs from claim 26 in that he does not specifically teach the precoding a bit stream for an optical transmitter, wherein bits of a differential encoded bit stream are inverted according to a predefined pattern. However, Miyamoto teaches the precoding a bit stream for an optical transmitter, wherein bits of a differential encoded bit stream are inverted according to a predefined pattern (i.e., Figures 2A, 9A, 10A, 11A and 17A, col. 12, lines 39-67, col. 13, lines 1-67 and col. 14, lines 1-38). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the precoding a bit stream for an optical transmitter, wherein bits of a

Art Unit: 2613

differential encoded bit stream are inverted according to a predefined pattern as taught by Miyamoto in the system of Suzuki. One of ordinary skill in the art would have been motivated to do this since allowing reducing the cross talk due to four wave mixing and reducing the inter-symbol interference.

Allowable Subject Matter

12. Claims 7 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
EXAMINER